NSW Government Submission

to the Productivity Commission's Issues Paper on Chemicals and Plastics Regulation

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Summary and Recommendations

The NSW Government recognises the benefits of chemicals to the NSW economy and quality of life, while noting the risks associated with the use of chemicals across their lifecycles will always need to be responsibly managed by industry, governments and consumers.

The NSW Government believes that most aspects of the current management systems governing chemicals and plastics operate effectively. Chemicals regulation in NSW is effectively integrated with other industry-based regulatory systems (e.g. for air, noise, water, workplace safety etc.) so that industry has straightforward and comprehensive interactions with Government. There would be major inefficiencies if chemical regulation was to be excised from such an integrated situation. There are some gaps, inefficiencies and inconsistencies that could be resolved, most notably in the area of industrial chemicals management.

NSW recommends:

1. The current chemicals management frameworks for dangerous goods and hazardous substances, agricultural and veterinary chemicals and food are operating effectively and efficiently and should be retained.

2. Improvements to the environmental management of chemicals under the National Framework for Chemicals Environmental Management (NChEM), as already agreed by Environment Ministers and all key stakeholders, should continue to be implemented as detailed in the NChEM Action Plan for the Environment.

3. NSW's position as a best practice chemical regulator/manager needs to be recognised in any consideration of national uniformity – NSW will not lower its existing standards of responsible risk management in the pursuit of national uniformity.

4. There needs to be effective national system-wide policy coordination.

5. Australia's performance in managing chemicals needs to be considered in the context of international best practice, for example developments in the European Union and Canada.

6. National level reforms to industrial chemicals management are needed. These reforms should include:

- the provision of a full suite of regulatory and non-regulatory tools to the national industrial chemicals regulator;
- streamlined linkages between national assessments and risk management actions;
- measures to effectively assess the risks of 'grandfathered' existing chemicals;
- regulation of chemicals in consumer products, including imported articles; and
- support for chemical industry innovation to encourage the use of chemicals that reduce/eliminate health, safety and environmental risks.

7. The Globally Harmonised System of Classification and Labelling (GHS) is a valuable initiative but should be adequately supported, managed and resourced at the national level to address implementation challenges.

8. There needs to be consideration of enhancements to chemical risk management in Australia through increased national investment in overcoming information gaps and asymmetries (by way of better data collection and chemical monitoring) and increased investment in growing Australia's chemical technical capacity/skills.

9. It is imperative to ensure that management regimes are appropriately resourced and that funding mechanisms are matched to regulatory and management approaches and powers if desired safety outcomes are to be achieved.

1. Introduction

'Effective . . . regulation is integral to successful markets, an essential ingredient of a vibrant, modern economy.' [1]

The NSW Government strives for an efficient, effective and streamlined regulatory framework. The regulatory framework governing the chemicals and plastics sector in NSW largely meets this goal. It is necessarily complex to some degree as it must protect human health, the environment and trade while providing economic certainty to NSW business and industry. The challenge is to provide a mix of policy tools that delivers the most cost effective outcomes: minimising compliance costs and maximising public benefits. The NSW Government has met this challenge by developing a regulatory framework to manage the potential impacts of chemicals and plastics that encompasses a diverse suite of regulatory tools. It encompasses strong regulations, along with co- and self-regulatory approaches. Within NSW, new regulations undergo a rigorous assessment process, including cost benefit analysis, to ensure that key principles of good regulation are met.

NSW is committed to a process of regulatory reform, with reductions in red tape one of the key priorities of the NSW State Plan.[2] NSW has established the Better Regulation Office to foster best-practice regulation, cut red tape and reduce the regulatory burden faced by business and industry. In the same period, the NSW Government committed to implementing the recommendations made by the Independent Pricing and Regulatory Tribunal (IPART) in its *Investigation into the Burden of Regulation and Improving Regulatory Efficiency*.[3]

NSW has also been a national leader in implementing reforms in the realm of chemical and plastics regulation. For example NSW has led the development of the National Chemicals Environmental Management framework ([NChEM]), which will deliver improved environmental consistency between States, Territories and the Commonwealth while minimising the burden placed on business and industry.[4]

However, in reforming regulation and making it more efficient and effective, it is important that outcomes are improved, not undermined. In seeking a nationally cooperative approach, it is vital that moves towards harmonisation or consistency are not used as a mechanism to dilute existing risk management standards by moving to the 'lowest common denominator'.

NSW also notes that moves towards national regulatory consistency and harmony must not lead to an erosion of whatever local measures are necessary to protect human health, the environment or local economies that may result from conditions specific to a region. Although some issues are consistent across state borders, each state has a unique set of circumstances that result from differences in the environment, climate, culture, economic activity, regulatory history and community expectations. In developing NSW regulations, the key driver has - and must continue to be - the State's own needs and objectives. There is no culture of "regulate first and ask questions later" in NSW. On the contrary, chemicals management is grounded in - and all regulation flows from - rigorous risk assessment.

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[1] Network of Heads of European Environment Protection Agencies (2005) *The Contribution of Good Environmental Regulation to Competitiveness.*

[2] See priority "P3" at http://www.nsw.gov.au/stateplan/pdf/State_Plan_complete.pdf

[3] NSW Government Response to IPART's *Investigation into the Burden of Regulation and Improving Regulatory Efficiency*, Recommendations 17-74, August 2007.

[4] NChEM is described in detail in the submission to the Productivity Commission provided by the Environment Protection and Heritage Council.

2. Cross-cutting issues for consideration

A number of general issues cut across all aspects of chemicals and plastics regulation. These include:

- the lack of a whole-of-system chemicals policy coordination process;
- the appropriate allocation of responsibilities for managing chemical risks;
- the use of a risk-based approach to chemicals assessment and management and related data issues;
- problems with information flows and access to information;
- the need to effectively address community expectations;
- the appropriate use of alternatives to 'traditional' regulation;
- the importance of accurately assessing human health and environmental externalities when assessing costs and benefits in chemicals regulation;
- the case for limited jurisdictional variation to reflect the very different contexts across Australia in which chemicals are used or produced; and
- the importance of comprehensive and inclusive consultation processes.

2.1 Lack of a system-wide coordination process

Responsibility for national chemicals policy in Australia is unclear. No single agency, Minister or Ministerial Council at Australian Government level has a designated policy leadership or oversight role in relation to chemicals. This is inconsistent with Commonwealth calls for greater uniformity of regulatory arrangements at the state and territory level, promotes reactive rather than proactive responses in identifying and managing chemical issues and can result in inconsistencies of approach between sectors (agricultural and veterinary chemicals, industrials, therapeutics, food safety). More effective national policy leadership by the Commonwealth would support regulatory agencies, capture efficiencies and allow lessons learned to be more effectively communicated so industry and the community understand requirements. It would also improve and assist Australia's engagement with international chemicals management issues, such as the Globally Harmonised System of Classification and Labelling of Chemicals (GHS).

2.2 Balancing responsibilities for managing chemical risks

It is essential that the Commission explicitly address the appropriate balance of responsibilities for management of risks associated with the use of chemicals. Relevant considerations include who should bear these responsibilities and how Australia compares with international best practice. A critical corollary issue is ensuring that adequate resources are allocated to meet assigned responsibilities.

With regard to how responsibilities should be allocated between industry, community and governments, there is an indisputable need for all levels of government to ensure risks associated with chemical use are prevented as much as possible and otherwise managed. For the most part, the burden of establishing whether a chemical meets societal expectations regarding its safety currently rests with government. For example, the current system for industrial chemicals allows industry to use chemicals that have never been subject to modern health or environmental risk assessments. It is up to governments to initiate reviews and set risk management actions where required.

This current regulatory context can be contrasted with developments overseas. For example, in the European Union (EU) the EU Parliament and Council of Ministers has enacted legislation through REACH (the **R**egistration, **E**valuation, **A**uthorisation and Restriction of **Ch**emical substances) which reverses the burden of proof onto chemical producers instead of the government chemical regulator.[5] Another notable development includes Canada's recently completed Domestic Substances List (DSL) Categorization, which has for the first time examined information available on approximately 23,000 previously unassessed chemicals. It has identified more than 4,000 chemicals warranting further scrutiny of their potential risks to human health and the environment.

Major overseas chemical reforms such as those noted above are highly likely to impact on Australian chemicals management. There would be benefit in a clearly articulated national approach to considering and acting on such developments to ensure that Australia 'keeps pace' with international best practice. Australia needs to be able to both maximise our potential to influence international developments and minimise the risk of chemical market exclusion if regulatory and policy settings are not aligned with trading partners.

The Commission should specifically consider ways responsibilities could be more equitably assumed by the manufacturer of chemicals rather than by the community or government, consistent with manufacturers of other types of products.

2.3 Chemical risk assessments and data issues

Effective assessment of chemicals is essential to ensuring the benefits of their use are properly realised and negative social and environmental externalities from unforeseen consequences of use are avoided or minimised. Risks of chemical use must be properly characterised so they can be effectively managed. Use of international data can contribute to more efficient risk assessment processes.

A risk-based approach to chemicals management

NSW supports the Commission investigating ways to encourage more efficient risk assessment processes. In doing so, the Commission should have regard to the following issues:

- assessment of risk involves both intrinsic hazard of the chemical and exposure. It is usually easier to obtain data on intrinsic hazard than it is to find information on exposure, which is usually commercial in confidence;
- for some groups of chemicals (polyelectrolyte flocculants for instance), material safety data sheets (MSDSs) rely heavily on generic toxicity data from similar chemicals. NSW authorities have found this information to be wrong at times due to significant differences in chemical components or formulations;
- community stakeholders have identified the commercial sensitivity of information as a barrier to more efficient sharing of information on chemical risks;

[5] The European Commission White Paper *"Strategy for a Future Chemicals Policy* states: "The allocation of responsibilities is inappropriate because authorities are responsible for the assessment instead of enterprises which produce, import, or use the substances. Responsibility to generate knowledge about chemicals should be placed on industry. Industry should also ensure that only chemicals that are safe for the intended uses are produced and/or placed on the market. The Commission proposes to shift responsibility to enterprises, for generating and assessing data and assessing the risks of the use of the substances. The enterprises should also provide adequate information to downstream users".

- the risk management approach must appropriately address uncertainty (e.g. where future risks cannot accurately be assessed), ignorance (i.e. lack of sufficient data and/or the question of information we do not know we need) and indeterminacy (i.e. information we may never have) by applying a precautionary approach in order to prevent human and environmental harm and the resulting high environmental remediation and public/worker health management costs in the longer term. Experience has shown high costs may result from the inadequate management of risks (a classic example is the extended inappropriate management of asbestos until an absolute 'causal' link was established despite the widely recognised human health risks). Scientifically plausible emerging risks need to be responded to in a transparent, timely manner;

- the need to address the challenge facing regulators and industry of finding appropriately trained/skilled staff to assess potential impacts of chemicals and develop safer alternatives. For example, there are shortages of toxicologists and ecotoxicologists;

- a sustained national commitment to enhanced monitoring of the effects and fate of chemicals is needed. Existing data gaps prevent meaningful measurement and monitoring of the effectiveness of both industry self-management measures and current government regulations and compromise effective dialogues between industry, community and government; and

- risk assessment processes need to comprehensively address whole of life cycle issues. For example, currently national regulators do not consistently assess the ultimate fate of chemicals in product waste streams and ultimately landfill in their decision-making. This can result in the creation of chemically contaminated waste streams that compromise industry and government resource recovery and re-use programs. Detailed examples of the implications of not fully considering the pathways for release to the environment and the ultimate fate of chemicals are provided in the **Appendix**.

Developments in risk management processes overseas

A case study is provided in the **Appendix** on the proactive approach California is currently driving to improve its chemicals risk assessment approaches and take account of some of the challenges highlighted above.

2.4 International data, information flows and access to information

Use of international data

Using international data for Australian chemical risk assessments can be a valid approach particularly for initial risk assessment work, provided it is scientifically sound and can be reasonably related to how and where a chemical may be used.

However use of data from overseas assessments without review or consideration of its relevance or transferability would not be acceptable. One of the areas where Australian data are still required is that relating to efficacy against Australian pest, weeds or diseases in the context of the Australian environment.

The movement of chemicals within the physical environment is also an area where the Australian environment has particular characteristics which are different to those overseas. Differences in soil type between eastern and western Australia, or in pest ecology between South Australian and NSW coastal citrus, make extrapolation difficult even within Australia.

The data requirements for new chemicals must continue to reflect the needs of contemporary risk assessment science and remain broadly consistent with the requirements of international regulators. Nevertheless, the fact that Australia is a climatically and biophysically diverse continent means that neither the data nor the risk assessments generated overseas will necessarily be applicable in the Australian context. This will remain problematic for Australia where the cost per unit of risk addressed is high relative to the size of the market.

The NSW Government supports Australia's national chemical regulators cooperating internationally via bilateral or multilateral arrangements to enable access to relevant risk assessments conducted overseas (for example in Canada or the EU), in order to share information and reduce the burden of regulation on Australian industry.

Information flows, access and collection

There are opportunities to improve the flow of information, access to existing information and collection of new information that would benefit most stakeholders. Issues recommended for the Commission's consideration include:

- assessment and regulatory actions by government agencies would clearly be more efficient and responsive if the flow of information between regulators was improved. NChEM is helping to address this issue for the management of industrial chemicals that impact on the environment and any further developments should build on that framework; and
- sufficient public and consumer information to allow informed choice about potential risks associated with chemicals, most notably with regard to industrial chemicals and chemicals in products.

In this regard, the National Pollutant Inventory (NPI) is a useful general information tool for basic information on some chemicals and it has been improving with time. However, because it currently only covers a small subset of chemicals and because the data is an estimation, it would be inappropriate to rely on it as a precise monitoring tool.

2.5 Meeting community expectations

The community expects to be protected from the risks of poor chemical management, to participate in decision making and to have adequate access to information about chemicals in the environment and in products.

As an example, in relation to the environment, social research demonstrates two key points. Firstly, the community expects government to protect the environment through strong regulation, and to frame these regulations with a long-term perspective. Secondly, while the community is willing to bear some of the costs associated with environmental protection, they also expect the private sector to bear costs associated with the private gains they make. Specifically, NSW research[6,7] shows that:

- 87% of respondents express concern about environmental problems and have particular concerns about the environment future generations will encounter;
- 64% express a willingness to pay more to fix environmental problems;
- 68% consider that chemicals have quite a lot or a very harmful effect on the environment; and

[6] NSW Department of Environment and Conservation (2004) *DEC Social Research Series: Who Cares About the Environment in 2003? A Survey of NSW peoples' environmental knowledge, attitudes and behaviours.*
[7] NSW Department of Environment and Conservation (2007) *DEC Social Research Series: Who Cares About the Environment in 2006? A Survey of NSW peoples' environmental knowledge, attitudes and behaviours.*

- 75% believe that controls on using chemicals should be tightened (such as with stricter legal requirements).

Recent research[8] on community views about the availability of information regarding chemicals shows:

- 89% want more information about chemicals and their impacts to be provided;
- 88% want more information about chemicals in the environment to be gathered; and
- almost 90% of people think more should be done to help people make choices about chemicals.

2.6 Alternatives to 'traditional' regulation

NSW recognises the value of using a range of regulatory approaches – from 'command and control' regulatory powers to co- and self-regulatory approaches.

Self regulation and co-regulation

Co-regulatory approaches can be very successful where industry bodies have broad representation and are supported by government regulatory bodies. Self regulation schemes can also achieve good outcomes, provided industry associations have sufficient market coverage, are based on transparent and credible arrangements, participants have proven capabilities, are responsive to any concerns that may arise from the community or government and deliver agreed targets within acceptable timelines.

NSW considers that the chemicals industry has shown considerable initiative in developing stewardship programs such as *Responsible Care, Agsafe*, *DrumMUSTER* and *ChemClear*, which complement existing regulatory requirements and aid in compliance (for full details see http://www.pacia.org.au/index.cfm?mmid=001 and http://www.agsafe.com.au/Home.php).

Significant resources from government and chemical user industries are committed to encouraging awareness and compliance with regulation through advisory and education programs as part of the overall compliance effort. Industry-based Codes of Practice reflect the current regulatory requirements and assist chemical users achieve compliance in a practical setting. The more effective these non regulatory strategies are, the less resources are required for enforcement.

It needs to be recognised that there are limits to what can be achieved through co- or self regulation in some circumstances and NSW experience has been that there are few alternatives to government regulation which have proven acceptable to the wider community. This was illustrated by recent experience with excess lead levels in paint on certain toy products, where it is understood that the Australian Competition and Consumer Commission moved to implement a ban, noting voluntary industry recall measures had proven insufficient to protect public health and safety in this case (there have been a number of other recent examples including diethylene glycol use in imported toothpaste).

There are also recent examples of industry calls for increased government regulatory intervention (especially to promote clarity in the market). Examples include industry calls for regulatory approaches to manage air emissions of volatile organic compounds

[8] Ibid.

(VOCs) from surface coatings and consumer products (see Case Study 1 in the **Appendix** for more detail) and calls for product safety standards.

Outcomes-based regulation already occurs
NSW acknowledges in general terms that a regulatory regime based on the achievement of broad outcomes is likely to be the most efficient and least costly for the regulated community. In reality, regulatory objectives relating to public health or environment protection are more likely to rely on a precautionary mix of output and outcomes focussed controls. Section 6.1 describes how such a mix is utilised within the NSW environment protection framework.

The Commission should also acknowledge that the current regulatory framework for agvet chemicals utilises a mix of both outcome and output focussed objectives for substantive reasons:

- agvet chemicals can have both acute and chronic impacts on public health, worker safety and environment. Acute impacts are often addressed by outcomes focussed regulation because the link between action and effect is immediate and more easily identifiable. Providing that appropriate performance indicators can be set and measured at reasonable cost, outcomes based regulation provides the clearest link between regulation and the underpinning objective;
- in the case of chronic impacts, the negative effects of exposure may not be obvious for some time. Process or output focussed controls are often utilised where the outcomes are too difficult or costly to measure, or where the outcome is too far in the future for effective feedback; and
- in many cases, the direct measurement of outcomes - such as the rate of occurrence of a chemical related disease in the community - is unacceptable. By the time the performance of a particular suite of regulatory controls is measured, the damage has been done. Clearly, in these circumstances a range of indirect measures such as the competence of the operator, adherence to label instructions, completion of an on-site risk assessment and the use of personal protective equipment provide valuable proxies for minimising the risk of exposure.

2.7 Accurately assessing costs and benefits

Chemicals provide many benefits to society. These benefits tend to be well recognised and costed (for example through estimates of chemicals and plastics industry contributions to economic outputs etc.). The negative externalities of chemical use have tended to be less well costed and accounted for in most assessments of costs and benefits regarding regulation of the chemicals and plastics industry.

The Commission should consider the persistence of market failures in various aspects of chemicals management and the need to comprehensively consider health and environmental externalities to accurately quantify the size and incidence of costs and benefits of effective chemicals regulation.

There are two primary sources of market failure in relation to chemicals and plastics regulation in Australia: non-price excludability and information failure. Both are discussed below with examples drawn from chemical management experiences in NSW.

Non-price excludability occurs where an activity has positive or negative economic welfare effects on others who are not direct parties to the transaction and they are not

compensated for these welfare changes. The inappropriate application, use, storage and disposal of chemicals may adversely affect workers, consumers, local communities, industry sectors and ecosystems. Many industrial chemicals currently in use in Australia have a growing body of scientific evidence of associated health and/or environmental risks (such as polybrominated diphenyl ether compounds (PBDEs)/ brominated flame retardants (BFRs) which are used in a wide range of products and perfluorooctane sulfonate (PFOS) a persistent organic pollutant with increasing scientific evidence of environmental and health effects). The market does not always satisfactorily account for the external costs (health and environmental) of such chemicals. Without some appropriate market signal, companies have no incentive to test, monitor and prevent long term risks and impacts since the high social costs are not always internalised or accounted for. For example:

- in 2005, testing of Sydney Harbour seafood showed dioxin contamination caused by industrial activity (especially chemicals manufacturing activities in the Homebush Bay area).[9] Commercial fishing was banned until 2011 with $5.8 million spent to buy back fishing licences – a significant drain on the public purse and an indication of lost commercial value from chemical contamination;[10]

- contamination from past industrial activity in Botany Industrial Park in Sydney has resulted in massive clean up costs for government and third parties, particularly serious groundwater contamination in and around Botany Industrial Park. The principal contaminants are volatile chlorinated hydrocarbons.[11] To date, $167 million has been committed to cleaning up chemically contaminated groundwater emanating from the Orica site in Botany and this represents only one of numerous site contamination costs[12];

- it is estimated that it will cost at least $180 million to clean up chemical contamination at Rhodes Peninsula[13];

- jurisdictions around Australia have expended up to $27 million in collecting and disposing of unwanted and deregistered farm chemicals under the *ChemCollect* program – yet consideration of end-of-life fate of chemicals and chemical disposal practices by both industry and chemical risk assessors is often limited; and

- a 2004 study by the University of Ontario demonstrated that pesticide exposure is associated with increased risk of developing cancers; chromosome aberrations; immune-system irregularities; Parkinson's disease; neurological impacts and reproductive problems (including birth defects).[14] Even for more minor effects, an individual suffering a headache or migraine associated with pesticide exposure may lose a day's work, pay money to visit the doctor and buy pain-killing medication which could have an economic cost close to $190 per person.[15]

[9] The former Union Carbide site at Rhodes manufactured pesticides and other chemicals – many of which are now subject to international bans. The group of chemicals known as dioxins were a by-product of this manufacturing process. Waste containing these chemicals was used to fill areas across Rhodes peninsula and in Homebush Bay.
[10] Environment Protection and Heritage Council (2006) *NChEM: A National Framework for Chemicals Management in Australia – Discussion Paper*.
[11] NSW Department of Environment and Conservation (2005) Botany Groundwater Cleanup Project, Joint Determining Authority Report, under Section 112 of the *Environmental Planning and Assessment Act 1979*.
[12] NSW Department of Environment and Climate Change figure.
[13] NSW Department of Environment and Climate Change figure.
[14] Sanborn et al (2004) *Literature Review by the Ontario College of Family Practioners*.
[15] Based on a salary of $40,000 (around $153 a day), $25 dollars to visit the doctor and $10 for medication, totalling $188.25.

Information failures occur where there is insufficient or inadequate information about such matters as price, quality, safety and availability for firms, investors and consumers to make informed decisions.[16] There is often limited biophysical and economic data available to measure the social, environmental and health benefits and costs of implementing regulatory changes in chemicals management. A complete analysis of costs and benefits of chemical use and their impacts is often inhibited by the complex nature of their toxicity, the manner of their use, whether solely, or in combination, the potential impact on, for instance, complex ecosystems and human health, the long time lags between the application of chemicals and potentially adverse impacts, and the diffuse nature of chemical use in products and its application.

Complex dose-response functions may mean that cause-and-effect relationships between chemical use and their impacts on human health and the environment are not always clear, there are often confounding factors (or other health impact triggers) and often may only be established over time. Consequently, there is likely to be a high financial cost in determining the toxicity of chemicals and their impact on ecosystems and human health.

A particular form of information failure in chemicals management is information asymmetry, such as:

- where consumers have difficulty in verifying or assessing producer's claims that products are healthier or have been produced using environmentally friendlier production methods. Consumers have no way of cost-effectively assessing such claims themselves;[17]
- in the case of consumer products, many of which provide no information about their chemical composition; and
- between new and 'existing' chemicals (where the latter have been 'grandfathered' and thus not undergone the same level of assessment for health, safety and environmental risks), which constitutes a barrier to the substitution of potentially less harmful chemicals as introduction of new chemicals requires a modern risk assessment process.

The Commission should consider how the ongoing information uncertainties (that may not ever be wholly overcome) should best be handled by industry, governments and the community in chemical risk management decision-making, making it impossible for consumers to exercise judgement or make informed decisions.

Concerns about best use of information within chemical management settings are common to all international and domestic chemical management regimes. The European Environment Agency (EEA) has looked in detail at this issue in a report entitled *Late Lesson from Early Warnings*. This report uses specific real world case studies to identify the costs and benefits arising from the use and non-use of early warning information in managing risks. The report concludes that "regulatory appraisal and control of technologies and economic development involves balancing the costs of being too restrictive on innovation with the hazards and costs of being too permissive, in situations of scientific uncertainty and ignorance. The cases studies provide many examples where regulatory inaction led to costly consequences that were not – and sometimes could not have been – foreseen."[18]

[16] Productivity Commission (2001) *Cost Recovery by Government Agencies*, Canberra.
[17] Department of Primary Industries (2004) *Review of Chemical Standards,* Evaluation Report No: 6, Melbourne.
[18] Poul Harremoës et al (2001) *Late lessons from early warnings: the precautionary principle 1896–2000*, European Environment Agency.

International analysis of costs and benefits in chemicals regulation
The EU undertook comprehensive impact assessment and cost benefit analyses over an extended time period prior to the introduction of REACH. There is a range of other useful international references on costs and benefits associated with chemicals regulation.[19]

The issue of health and environmental costs/externalities resulting from the inappropriate or inadequate management of chemicals, as well as analysis on the implications of market failures, has also been comprehensively explored in a recent academic report in California. A brief summary of the key points from this analysis is provided in the **Appendix**.

2.8 The case for limited State and Territory regulatory variation

NSW supports the Commission investigating opportunities to enhance the uniformity of the regulatory systems operated by States and Territories. However NSW considers it essential that jurisdictions retain the ability to take local conditions and within-jurisdictional simplification and streamlining initiatives fully into account in developing any revised regulatory system and to respond in a timely manner to local industry and community needs.

The Commission's attention is drawn to the following NSW examples:

- NSW has introduced mandatory training and record keeping requirements for all persons who use pesticides in their work or business, and requires certain users to provide notice of pesticide use. These reforms were overseen by the broadly representative Pesticides Implementation Committee with extensive industry and community consultation. These requirements are key tools to prevent pesticide misuse and most NSW stakeholders would not support wind-back of these requirements in the name of national uniformity;
- To help simplify and streamline requirements affecting chemical industries and regulation of waste, the NSW Government is increasingly aligning regulatory parameters across portfolios. For example, requirements for environment protection licensing (draft amendments to the thresholds and categories for industries that are licensed under the *NSW Protection of the Environment Operations Act 1997* are currently subject to public consultation) aim to be as consistent as possible with requirements under development assessment and other regulatory systems. It is important that these within-jurisdiction improvements are not compromised by centrally-imposed constraints which apply only to a single specific area; and
- It will always be necessary to introduce jurisdiction-specific requirements for some agvet products to accommodate unique environments, community needs,

[19] Additional useful references include:
- The *OECD Environmental Outlook*, which includes data on health costs of chemical contamination.
- European Environmental Bureau & WWF DetoX Campaign (2005) *REACH Impact Assessments - Assessing EU Environmental Policy Impacts: A Critical Evaluation of Impact Assessments carried out for Europe's chemical policy reform (REACH)*, http://www.eeb.org/activities/chemicals/200506-EEB-WWF-REACH-IA.pdf
- *Ex-post estimates of costs to business of EU environmental legislation (Final report)* (2006) Commissioned by the European Commission, http://www.ecologic.de/download/projekte/1750-1799/1750/1750-01_final_report.pdf.
- Martin Frank Mogensen et al (2007) *Challenges for Economic Analysis under REACH: What can we learn from previous experience?*, Danish Environmental Assessment Institute. http://imv.net.dynamicweb.dk/Default.aspx?ID=65
- OECD (2006)*Cost-Benefit Analysis and the Environment, Recent Developments*, http://www.oecd.org/dataoecd/37/53/36190261.pdf
- Paper by the Network of Heads of European Environment Protection Agencies (2005)*The Contribution of Good Environmental Regulation to Competitiveness*, www.eea.europa.eu/documents/prague_statement/prague_statement-en.pdf

climatic regions or a particular mix of physical, biophysical and social factors. For example, some States have restricted the application of certain herbicides (such as 2-4-D esters) to particular times of the year to avoid damage to crops that may be more sensitive to herbicides at that time. In other States, similar provisions, while available in legislation, have not been implemented because the particular mix of risk factors has not been present and the imposition of such a restriction is not justified.

- At a recent roundtable discussion chaired by NSW regarding the options for linking environmental recommendations being made by NICNAS with State and Territory on-ground actions, all stakeholders recognised and supported the need for exemption provisions in any regulatory system. They also noted that such provisions, and the processes for their implementation, should be clearly and transparently set out, based on robust criteria and include an opportunity for review.

2.9 Consultation processes

Transparent and inclusive public consultation processes are an important part of an effective chemicals and plastic management regime. A number of improvements could be made to existing consultation mechanisms. The Commission should consider more effective public consultation mechanisms, such as greater use of the internet for public dialogue and feedback on chemicals issues (as occurs in California).

The NSW Government supports greater involvement of indigenous communities in chemicals/plastics management. Chemicals management decisions have the potential to affect Aboriginal owned land and Aboriginal communities and targeted consultation strategies are needed. This would align with the NSW Government's activities for involvement of, and consultation with, indigenous communities in other environmental/government decision-making processes. For example, the NSW Government currently engages indigenous communities on issues such as waste management and illegal dumping. NSW suggests the Commission consult specifically with representative Aboriginal bodies, such as local Aboriginal Land Councils, to ascertain how and on what issues Land Councils might want to be consulted.

3. Industrial chemicals management

There are a number of issues with the current industrial chemicals regulatory framework that result in inefficiencies and limit the effectiveness of the regulatory framework in achieving its objectives with regard to protecting Australian people and the environment. Regulatory reform in this area is needed.

The major issues in the current management of industrial chemicals include:

- limits to the scope of the powers available to the national industrial chemical regulator when compared to the powers of other national chemical regulators, that lead to gaps in chemicals management;
- risks resulting from the large number of unassessed 'existing' chemicals;
- the lack of a formal linkage between NICNAS and State and Territory regimes in environmental chemicals management that creates uncertainty for industry;
- the lack of post market monitoring data and triggers to obtain such data;
- inconsistencies and system gaps in relation to labelling of industrial chemicals; and

- a regulatory gap in the regulation of chemicals in products.

Each of these key issues is discussed in more detail below.

3.1 Scope of the national regulator's powers

The national industrial chemicals regulator's current regulatory powers are limited. For example:

- NICNAS does not have the ability to directly ban or recall the supply and sale of industrial chemicals where a high risk of harm to the Australian people or the environment is identified (unless the chemical is the subject of an international treaty to which Australia is party);
- NICNAS is currently able to make 'recommendations' regarding the management of chemicals and it is not always clear how 'mandatory' these recommended controls are or should be. Management of industrial chemicals could be streamlined if those NICNAS assessment recommendations necessary to prevent harm were clearly mandated and separated from any recommendations that simply describe or suggest good practice. NChEM's work on a 'regulatory link' is seeking to address this gap in the area of environmental chemicals management (see section 3.3 below) and is strongly supported by NSW;
- accountability and governance arrangements should be improved to provide greater transparency, while ensuring timely outcomes with the minimum of red tape;
- there is a need for greater information gathering and public access to information about chemicals to which the community is exposed. This would enable informed decision-making on the part of consumers and in the case of potentially harmful chemicals may enable market forces to drive the development of safer alternatives; and
- current arrangements do not facilitate development of safer chemical alternatives within Australia. It is easier for industry to continue to use 'grandfathered' existing chemicals that have never been assessed for their health or environmental impacts (at an unknown cost to health and safety) than to develop new 'softer' chemicals that must go through a full assessment process. There is a need to balance the necessary process of risk assessment with incentives to encourage industry to pursue safer chemical alternatives.

By comparison international regulatory counterparts have moved over recent years towards increasing the powers and structures of their chemicals management regimes to better engage with industry on identifying and managing chemical risks.

3.2 Risks from unassessed 'existing' chemicals

The Productivity Commission should consider ways to better address 'existing' chemicals in the industrial chemicals management framework, noting that Australia runs the risk of being out of step with international developments and resourcing in this regard.

There are approximately 40,000 industrial chemicals available for use in Australia, of which around 38,000 are classified as 'existing' chemicals, i.e. chemicals that were already in use in Australia prior to the establishment of NICNAS. The vast majority of these chemicals have never been subject to modern risk assessments and have thus not been assessed for any potential environmental or human health effects. This

results in an unknown, but potentially serious, risk to human health and the environment. While many of these chemicals have been used for a long time without any noticeable adverse consequences, others are raising significant concerns around the world.

There are no broad screening programs underway for industrial chemicals in Australia. Existing chemical assessments are currently being completed at the rate of up to ten per year. To assess the current backlog of industrial chemicals at the current rate would take thousands of years. By comparison, Canada has recently screened 23,000 'existing' industrial chemicals and found that a significant proportion of these chemicals exhibit hazardous and potentially harmful properties. A similar process has been implemented in Denmark. Australia is likely to be allowed access to this information, but still needs capacity and resources to identify and act on priorities and gather information on use patterns in Australia.

The EU, through REACH, is also addressing the problem of 'existing' unassessed chemicals and has established the European Chemicals Agency, with an expected average annual budget of €90 million, financed from fees paid by industry and contributions from the European Parliament and Council. NICNAS annual budget is approximately $7 million.

The Commission should consider whether current resources available for national chemical regulation are adequate.

3.3 The environmental gap in industrial chemicals regulation

There has been an absence of appropriate linkages between different levels of government, particularly in relation to the environmental management of industrial chemicals. There are systems in place to facilitate the adoption of the OH&S and public health recommendations and their implementation at a State and Territory level with some consistency. However, in the Commonwealth *Industrial Chemicals (Notification and Assessment) Act 1989* there is currently no statutory or non-statutory mechanism to require the States and Territories to implement a NICNAS environmental risk assessment recommendation, or to implement such a recommendation consistently across jurisdictions. This can result in regulatory uncertainty and inconsistency for industry and consumers. This was identified by the EPHC Chemicals Working Group as a significant gap in the industrial chemicals regulatory/management system.

Of key concern is the unnecessary compliance burden on industry and cost and administrative burden to governments that currently results from the inconsistent and differing regulatory regimes across the State and Territory jurisdictions and the resulting uncertainty about *whether, how* and *when* NICNAS environmental recommendations will be implemented by the States and Territories.

The NSW Government supports NcHEM, which is currently being progressed by the Environment Protection and Heritage Council (EPHC). The EPHC, comprising Environment Ministers from all Australian states and territories and the Australian Government, recently endorsed NChEM as a framework to streamline and simplify the management of chemical risks to the environment whilst maintaining positive environmental outcomes.

Actions to work towards addressing the above gap have been developed and agreed by EPHC at its meeting on 2 June 2007 and are now being implemented. The NChEM Action Plan addresses issues in the following four key action areas as they relate to the environment:

1. assessment of chemicals
2. environmental management and controls for identified chemical risks
3. information flow and feedback and
4. strategic priority setting for early risk identification and management.

NChEM replaces the current ad hoc, state-by-state and often duplicative actions on chemical issues and the environment with one nationally consistent approach to assessments, regulation, managing and using information and setting priorities for the environment.

3.4 Monitoring and post-market surveillance

Another gap in industrial chemicals regulation is the lack of adequate data and feedback loops to assess the actual fate and impacts of chemicals once approved for manufacture or use. There may be value in the establishment of a nationally coordinated system of surveillance, monitoring and post-market reporting for industrial chemicals which would increase the knowledge base on industrial chemicals in use in Australia; provide information to assist with risk management strategies through identification of adverse impacts; and provide early warning of emerging patterns of health and environmental risks. NICNAS intends to establish a working group to scope this process, which NSW supports as an important step forward. (Better information about agricultural and veterinary chemical use is also required – see Section 4).

3.5 Labelling

The labelling of industrial chemicals or articles containing industrial chemicals represents another inconsistency and system gap. For example, consumers can see full ingredient listings on labels for some cosmetics such as hand creams but not for their household cleaners and they are not able to determine what chemicals may be in their furnishings, carpets and other products.

A key to better understanding and managing chemical risks is the provision of adequate information to consumers to enable them to make informed decisions about their own exposures. Current systems do not enable this to occur. Much consumer concern about chemicals could be overcome by the provision of ingredient listings in product/merchandise labels. This would be particularly beneficial for those consumers with particular chemical sensitivities/ vulnerabilities who may otherwise lobby to restrict chemicals in products.

Labelling would also facilitate better management of chemicals by industry and governments in those instances where problems may arise with particular products. For example a chemical may be identified as a concern in a particular toothpaste or household cleaner, but it is then difficult to identify whether it is likely to be a problem across a broader spectrum of products when there is no information on the label and no mechanism for identifying whether articles being imported contain those chemicals.

3.6 Chemicals in articles/products

Recent high profile issues in Australia regarding diethylene glycol in toothpaste, leaded paint on children's toys and formaldehyde in blankets have highlighted a significant issue in industrial chemicals regulation. Identifying and managing risks from articles containing industrial chemicals is a major system gap. Responsibilities for ensuring imported articles do not contain harmful chemicals are unclear and split across agencies (such as the ACCC, NICNAS and Customs). Management of risks from chemicals in products has generally been reactive rather than proactive. When

combined with the lack of labelling/information requirements in Australia this results in a significant gap in our ability to ensure that the general public and the environment are protected.

Key issues for industrial chemicals include:

- fragmented and unclear responsibilities at the Commonwealth level that result in incomplete and often inconsistent management of chemical related product safety issues. Who is responsible for ensuring products containing chemicals meet the community's expectations about safety?
- lack of clarity at the Commonwealth level in relation to chemical standards for consumer products. What are appropriate chemical content safety standards, who should set them and how should they apply?
- information paucity. Where information is uncertain, unavailable or incomplete, how should chemical product safety be managed?

It should be noted that the need to better address chemicals in products is not mutually exclusive of the need to continue to assess individual industrial chemicals or groups of chemicals. There is a place for both individual chemical assessment and product assessment/consideration.

4. Agricultural and veterinary chemicals management

The Commission should acknowledge:

- that the current system for controlling the use of agricultural and veterinary (agvet) chemicals in this State already represents best practice;
- that the agvet chemicals sector has a sophisticated risk assessment and management framework which continues to be refined in response to new policy imperatives;
- that steps to reduce any duplication and complexity at the margins for those operating across regulatory schemes should not be achieved at the expense of the majority of the regulated community or through any increased exposure of the community to unnecessary risk by diminishing best practice regulation;
- that the assessment and registration system operated by the APVMA is mostly effective, but there may be opportunities for improving the efficiency and resourcing of that system; and
- the current mix of outcomes-based and prescriptive approaches to regulation of agvet products is justified and appropriate.

4.1 The agvet system compared to other industry sectors

Unlike most other sectors of the chemicals and plastics industry, agvet chemicals are intentionally distributed into the natural environment with an expectation that (at least to some pre-determined level) they may persist in the environment in areas such as soil, air and water. In most cases the residues of these chemicals will appear in fresh and processed foods and be consumed by all age groups in the community with the expectation of no harm. The agvet system relies on chemicals that are intentionally designed to destroy biological entities and are potentially hazardous to humans and to a wide range of other life. Consequently the risk management framework for agvet chemicals is conservative by necessity, and highly sensitive to the real or perceived concerns of the broader community.

The Commission should note:

- The agvet system is one of the few sectors with significant continuity between the national risk assessment processes and downstream risk management. Environment regulators are now moving to refine this arrangement further with respect to the environmental risks through the NChEM initiative of environment ministers, which is described elsewhere in this document;[20]
- only a small percentage of affected industries deal with more than one regulatory scheme. For example, approximately 90% of agvet chemical products are produced by manufacturers who only produce agvet chemicals;
- regulators and policy makers within the agvet sector are currently implementing reforms that will further reduce the regulatory burden on manufacturers of low risk products by either removing them from the scope of regulation or reducing the administrative requirements for entry to the market. While concerns have been expressed from some industry stakeholders regarding this process, the pace of these reforms has been set by the rate at which community, industry and government stakeholders have accepted the proposals; and
- the *NSW Pesticides Act 1999* has established a best practice control-of-use system that has effectively raised the bar for pesticide use so that risks are reduced. Pesticide users also benefit from the efficiencies of having a common regulatory agency (the DECC) that also implements environment protection, conservation, native vegetation and other statutes.

NSW supports the APVMA's operation of the national assessment and registration system and the control of products up until the point of sale. There are nonetheless several areas where the efficiency of that system could be improved or better resourced to achieve:

- more timely and substantive consultation with states/territories, especially regarding the program of chemicals subject to review;
- enhanced resourcing of compliance and audit programs; and
- better information collection/provision about pesticides post sale, such as about volumes and active ingredients used in specific regions. It is often difficult for industry and governments to identify and manage risks in the absence of such basic data about use patterns (for example, lack of such data made the response to recent concerns about 2-4-D ester products much more difficult).

4.2 Significant national harmonisation has already occurred

While there are still some variations between states and territories in the regulation of agricultural chemicals, the impact of these on the regulated community continues to diminish, either because the variations apply in fewer states or because the variations are mostly at the margins. Most states now have very similar regulatory powers to deliver a range of risk management outcomes. The degree to which some of these powers are exercised varies across the jurisdictions to deal with issues that may be unique to a particular state/territory in their scope or impact. In recent times this has been mistaken for a lack of harmonisation rather than states and territories responding to different priorities.

The Commission should note:

- the regulation of agvet chemicals is now mostly harmonised;

[20] Although NChEM is focused primarily on resolving the significant gaps and issues in the industrial chemicals regulatory system, the Commission should note that NChEM also allows refinements to the agricultural and veterinary chemicals system, including the production of a best practice manual for environmental risk assessment of agricultural and veterinary chemicals. The draft environmental risk assessment manual is currently available for public consultation.

- the *NSW Pesticides Act 1999* ensures that all directions and conditions which result from APVMA registration and review processes, including any restrictions on the supply and use of hazardous pesticides by certain persons, automatically formally apply in this State;
- in NSW, the various regulatory agencies with an interest in agvet chemicals work closely together to minimise duplication and remove any inconsistencies between agencies. Formal memorandums of understanding exist between some agencies and these define relative responsibilities and remove uncertainty at the margins of regulation; and
- NSW is not aware of any inconsistencies in regulation between NSW and the Australian government in the area of agvet chemicals which is not already the subject of review.

The Commission has identified the adoption of the agvet code as the basis of the National Registration Scheme for agricultural and veterinary chemicals (NRS). Coordination of the underpinning policy framework for both the NRS and control of use is achieved through the Product Safety and Integrity Committee (PSIC), a sub-Committee of the Primary Industries Standing Committee. PSIC has been the principal driver of agvet chemicals reform including the harmonisation of control of use between states and territories. This process has worked adequately at a rate which reflects the priority given to the various issues by members.

4.3 Risk mitigation context is important

The Commission's consideration of control of use regimes must distinguish clearly between those elements of the regulatory framework which relate directly to a consistent approach to the use of registered products according to their approved labels, and those elements that relate to risk mitigation in the particular environment in which agvet chemicals are used. Most of the criticism relating to a lack of harmonisation between states/territories in recent times has related to the latter point.

States and territories will always need some flexibility to vary regulatory requirements to meet local needs (refer to section 2.8 for an example in relation to the use of 2,4-D ester products). A state should not be required to remove a product use restriction or regulation provision solely for the purposes of harmonisation, where these have been judged necessary to manage the community's real or perceived view of risk in that state.

5. The occupational health and safety (OHS) framework

NSW and Australian OHS legislation aligns closely to international requirements, the level of regulation and control provisions are consistent with world best practice and significant national harmonisation has already occurred.

NSW has had considerable practical experience harmonising State requirements through adoption of national model regulations. The *NSW Occupational Health and Safety* (OHS) *Regulation 2001* gives effect to the nationally agreed model legislation and codes for both hazardous substances and dangerous goods. This legislation also gives effect to the national Australian Code for the Transport of Dangerous Goods (ADG Code) by Road and Rail and as such gives alignment to the United Nations classification and transport requirements for dangerous goods. The current application of the ASCC codes for material safety data sheets (MSDSs) and labels are also applied through the NSW legislation.

The Commission should note:

- Hazardous substances management relies on the ASCC workplace exposure standards to establish safe exposure standards and as such aligns to the NICNAS classification outcomes. There is some concern that the exposure standards are not being adequately managed at the national level.
- The alignment with international shipping and transport requirements results in no effective barriers to legitimate trade.
- Our national agreements for trade with New Zealand are not compromised by application of any restrictive NSW regulations.

WorkCover NSW is represented on the ASCC and works to implement national OHS standards and codes of practice. Through active participation in many consultative forums with State and National co-regulators the NSW government has sought to ensure consistency of regulatory approach with other jurisdictions.

The Commission should acknowledge that NSW is already participating in national OHS reform processes, such as:

- the preparation and comment phase of the introduction of the international GHS standards for chemical labelling, information and safe use; and
- the development and adoption of the new 7th ADG Code which reflects the latest amendments for the contemporary 15th UN Code.

Implementing OHS regulations often requires interpretation, clarification and guidance through policy development, which in turn often requires involvement of multiple parties and agencies at the state level (for example in developing codes of practice). There are also some areas of joint regulation between NSW agencies, such as poisons (Standard for Uniform Scheduling of Drugs and Poisons or SUSDP), pesticides, dangerous goods and explosives.

Security Sensitive Ammonium Nitrate

NSW has adopted the national requirements for Security Sensitive Ammonium Nitrate (SSAN) and has applied the principles of security clearances for persons across the explosive licence spectrum.

Globally Harmonised System of Classification and Labelling of Chemicals (GHS)

NSW supports GHS in principle (which attempts to combine hazardous substances and dangerous goods), however there are some implementation issues associated with the draft GHS package released for public comment earlier this year. These issues will impact on proposed implementation of the GHS package. In particular, OHS labelling will impact on systems that are not entirely compatible such as the APVMA and the SUSDP.

The GHS package needs to be adequately supported, managed and resourced. It should be acknowledged that technical documents, including those associated with hazardous substances, have not been adequately updated or maintained for some time (for example exposure standards and associated guide, lists of carcinogenic substances, substances prohibited for specific uses, hazardous substances for which health surveillance is required and the guidelines for health surveillance). Given the need for members of the community to have ready access to current, accurate advice on such issues, it is vital that adequate resourcing be available for this material in the future.

6. Environment protection regulatory framework

The Commission should acknowledge that the day-to-day regulation of industry and its use of chemicals in NSW is integrated within the broader framework for environment protection as administered by the NSW Department of Environment and Climate Change (DECC). In this regard the Commission should note:

- NSW systems for the environmental regulation of chemical use and disposal are effective and already utilise outcome-based approaches;
- that the distribution of responsibilities between State and local authorities for regulating industries is broadly consistent with approaches in other jurisdictions;
- attempts to make isolated changes to chemicals and plastics regulation without full consideration of other aspects of environment and conservation regulation could significantly reduce regulatory efficiency and increase costs;
- waste management and resource recovery initiatives by state and local governments and industry are currently compromised because the existing industrial chemicals regulatory system does not properly consider whole of life cycle costs;
- regulation of land contamination and dangerous goods transport in NSW is already substantially based on national frameworks; and
- the activities regulated under NSW environment protection statutes are regularly reviewed and NSW needs to remain responsive to local needs.

6.1 Environmental protection framework

NSW supports the Commission considering alternatives to government regulation as part of a combined approach of using regulatory and non-regulatory tools. NSW environmental regulatory frameworks use a mix of tools including licensing, legislated minimum standards, market based instruments, mandatory and voluntary reporting and risk-based enforcement, education and partnership programs. An outcomes-based approach to regulation should be encouraged, wherever possible.

NSW has the right mix of tools

Some of the tools that NSW uses to regulate and manage chemical and plastics industries are outlined below:

- Premises that pose a high environmental risk require a licence under the *Protection of the Environment Operations Act 1997*. The licence uses an 'outcomes' based approach, and often sets standards for air, water, noise and waste pollution etc.
- Load-Based Licensing – A scheme based on the polluter pays principle that provides continuing incentives for large emitters to reduce pollution from their activities in a cost effective and timely manner;
- Pollution Reduction Programs (PRPs) – A PRP can be incorporated into a licence to target site-specific environmental problems. A PRP sets a series of actions that the licensee must meet within specific timeframes.
- Where necessary, clean-up and prevention notices can be used to improve the performance of unlicensed premises.
- Chemical control orders are a primary regulatory tool under the *Environmental Hazardous Chemicals Act 1985* and are used to control particular chemicals of

and chemical wastes of concern, and their potential or actual impact on the environment (see section 6.2 for further information).

- Extended producer responsibility schemes can be implemented voluntarily via industry under the *Waste Avoidance and Resource Recovery Act 2001.*
- Education and industry partnerships. Successful NSW examples include:
    - The Sustainability Advantage Program, where DECC partners with industry sectors to help companies to integrate environmental sustainability into their daily business operations. Participants benefit from a simple management diagnostic tool, structured modules and individually tailored projects (more information is available at http://www.environment.nsw.gov.au/sustainbus/index.htm).
    - For residential premises, the NSW Household Chemical Clean-Out Program that assists householders to responsibly dispose of their household chemicals.
    - Education initiatives such as production of guidance material aimed at industry and small business, on the safe use of pesticides and the assistance of bilingual liaison officers in improving pesticide use and regulatory compliance.

NSW experience has been that successful use of 'soft' regulation such as education or voluntary partnerships is generally contingent on strong legislative underpinnings. It has been demonstrated that an effective policy regime requires a mix of tools where regulation might be supported by education and incentive schemes. Self-regulation does not capture rogue businesses/industries that are inclined not to uphold the law or industry standards.

Linkages with national systems

NSW considers that its environment protection framework in most cases is broadly similar to those of other jurisdictions. The Commission should note the following:

- significant State-based reforms have been undertaken to integrate and streamline the operation of environment and conservation statutes with the land-use planning and development control system, so any attempts at harmonisation between jurisdictions would also need to fully account for flow-on implications to that system (details of NSW planning reforms are available at http://www.planning.nsw.gov.au/planning_reforms/index.asp);
- the regulation of the transport of dangerous goods and the management of land contamination in NSW are already substantially linked to consistent national frameworks (see sections 6.3 and 6.4)
- attempts to isolate regulation of the environmental impacts of chemicals and plastics industries and separate on-ground regulatory approaches for chemicals from existing linked regulatory approaches to other issues (such as water, air, waste management) would fragment regulation and lead to inefficiencies from no longer having a 'one-stop-shop' regulator; and
- there are also issues in parts of the system not covered in the Commission's Terms of Reference, for example possible impacts resulting from therapeutic chemical waste in sewage effluent.

6.2 Environmental management of high risk chemicals

NSW introduced landmark chemicals legislation in 1985 with the establishment of the *Environmentally Hazardous Chemicals Act 1985* (the EHC Act). This flexible Act has broad powers that allow a suite of regulatory and policy approaches to be applied to high risk chemicals and chemical wastes across their lifecycles. It has been applied to chemicals subject to international treaty obligations and other high risk chemical wastes such as dioxins and tributyltin. Chemical control orders made under the EHC Act provide a 'single instrument' approach to management of chemicals of any type or source including commercial chemicals, unintentional by-products, and chemicals from a particular waste stream. This avoids the regulatory inefficiencies produced when broad controls would otherwise need to be applied under a number of narrowly focused pieces of legislation (e.g. worker safety laws, agvet, and pollution control legislation).

6.3 Contaminated sites

Regulation of land contamination (including chemical contamination) in NSW is based on a risk-based and fit-for-proposed land use approach that has progressively resulted in the remediation and return to productive use of chemically contaminated former industrial land. Where land contamination is shown to pose a significant risk of harm to the environment or human health as defined under the NSW *Contaminated Land Management Act 1997*, the DECC regulates the investigation and remediation of contamination, with liability based substantially on the polluter-pays principle. The system relies substantially on the processes and soil criteria specified in the *National Environment Protection Measure for the Assessment of Site Contamination*.

6.4 Dangerous goods transport

Dangerous goods transport regulation is undertaken in NSW jointly by DECC and Workcover NSW, in accordance with a Memorandum of Understanding. Dangerous goods are packaged, labelled and transported in accordance with requirements set out in the *Australian Dangerous Goods Code* (ADG Code). The Code is based on UN Model Regulations for the Transport of Dangerous Goods, which are published by the UN Committee of Experts on Dangerous Goods. It is recognised internationally that specific handling and transport requirements should be in place due to the acute risks associated with these substances. In broad terms, Workcover NSW is responsible for classification, packaging and labelling issues while DECC is responsible for regulating on-road and on-rail transport.

In February 2007, the Australian Transport Council (ATC) approved an updated package of dangerous goods law developed after extensive public consultation with all stakeholders undertaken by the National Transport Commission. The package consists of a Model Law (proposed Act), a Model Subordinate Law (Regulation), a revised ADG Code and a Regulatory Impact Statement. Some revisions are being made to this package and the ATC has recommended that the commencement date for this law should be 1 July 2008. NSW has agreed with this recommendation and NSW is on track to deliver our responsibilities under the new system.

NSW believes the dangerous goods transport regulatory framework achieves real uniformity across Australian jurisdictions. There are currently some minor differences between States in the current version of the national system, however these are expected to be eliminated in the new version to be introduced in 2008, which will:

- ensure compatibility with international transport regulations and codes;
- improve domestic transport efficiency thus benefiting retail distributors and small business; and
- continue to promote safety

The NSW Government strongly supports the existing arrangements for classification, packaging, labelling and transport of dangerous goods and is committed to continued participation in the national uniform system for transporting dangerous goods.

7. Food safety issues

Food standards adopted on a nationally uniform basis are used to regulate the composition, contamination and safety of foods. The standards permit the use of specific food chemicals as food additives, nutrients and processing aids. Specific chemicals have to comply with prescribed standards for their identity and purity. The Australia New Zealand Food Standards Code (the Code) also prescribes maximum limits for contaminants present in foods. These include not only residues of agricultural chemicals but also the carry-over of specific contaminants from other external and environmental sources. These requirements are outlined in the Code, which has been adopted through corresponding Food Acts in each State and Territory. Where there is no specific limit established in the Code, food businesses still have an obligation to produce safe food.

Over the last 10 years the food regulatory framework has undergone substantial policy, institutional and legislative change which the NSW Government strongly believes has led to significant improvements in its efficiency and effectiveness. The NSW Government believes the Commonwealth, State and Territory Food Regulation Agreement provides a good model for achieving an efficient, effective and uniform regulatory scheme. It:

- includes a central national policy formulating mechanism through the Australia and New Zealand Food Regulation Ministerial Council (ANZFRMC);
- is based on a central standards setting body in the form of Food Standards Australia New Zealand (FSANZ);
- establishes a national Code that has been uniformly adopted by jurisdictions and has thus now effectively eliminated inconsistencies between jurisdictions;
- provides sufficient flexibility within the food regulatory system to incorporate and respond to changing knowledge and understanding of issues over time;
- clearly states food regulatory objectives and sets a reasonable balance between the regulatory burden placed on industry relative to the potential health human risks; and
- the consultation process within the FSANZ food standards development process is open, transparent and effective, inclusive of all stakeholders and interest groups and aligns with processes in Europe and North America, as well as through the joint WHO/FAO Codex Alimentarius Commission.

It should be recognised that due to the need to protect public health, the system is of necessity conservative, however this does not mean it is risk averse. The food regulatory framework does not operate according to what the Commission terms a "'regulate first and ask questions later' culture" (as noted consultation processes are transparent and inclusive) and in NSW there has been no evidence of excessive or unnecessary costs imposed on industry by the current food regulatory framework. In addition there is no evidence of regulatory overlap or inconsistency that might negatively impact on business. The food regulatory framework provides a good example of a coordinated uniform national system and the efficiencies of such a system for both business and governments.

The Productivity Commission should, however, note the following issues in relation to the food regulatory system:

- There is a current lack of regulation over food contact chemicals and additives in animal feed, and more work should be undertaken to consider these issues.
- There is a need for improved resourcing for programs/tools to enhance public understanding of the potential risks from chemicals and plastics.
- The importance of maintaining and promoting the work currently underway to coordinate FSANZ and APVMA processes and to promote the ongoing national work on coordination of compliance and enforcement activities across jurisdictions.

These issues are discussed further below.

7.1 Regulation of food contact chemicals

The NSW Government has identified only limited remaining concerns in those areas effectively within the current regulatory responsibility of FSANZ. The FSANZ approach is strongly grounded in a sound risk-based approach in the areas of additives, processing aids and pesticide residues. However, there are some concerns with respect to the regulation of plastics intended for food contact use either as packaging or as equipment or utensils, and with other food industry chemicals which could be a source of contamination, such as lubricants and sanitisers. These issues have not yet been addressed comprehensively in the Australian context. These chemicals are generally industrial chemicals and thus typically regulated by NICNAS. However because they are not typically assessed in the context of their direct use in food contact contexts, the risks from their use in the food industry may not be fully accounted for. This demonstrates one impact of the lack of system wide coordination in chemicals regulation.

Regulatory regimes such as the United States Food and Drug Administration (USFDA) and the EU's European Food Safety Authority (EFSA) have taken a far more prescriptive approach to food contact plastics and to other chemicals used in the food industry. EFSA have also taken a more prescriptive approach to additives used in animal feed where there are human health and safety implications through carry over to food products.

7.2 Regulatory issues

The responsibility for development of national policy to guide standards development rests with the ANZFRMC through its Food Regulation Standing Committee (FRSC) which provides an effective national policy-setting body, while FSANZ's role is standards development and risk assessment. The Commission should also be aware of, and support, steps taken to streamline the APVMA processes and those of FSANZ to capture regulatory efficiencies at this intersection of chemicals management.

The current food regulatory framework in Australia appears to strike an appropriate balance between protection of public health and assessment of risk and does not result in barriers to entry for businesses. NSW does not believe there is any evidence of regulatory overlap or excessive or unnecessary burdens or costs on industry.

With respect to additives, processing aids and pesticide residues, the current balance between the regulatory burden on industry and the risks to human health and safety is

generally appropriate (noting however that there is currently no direct assessment of environmental impacts).

Compliance and enforcement

FSANZ does not have an enforcement role. Food standards are enforced by State and Territory jurisdictions. Jurisdictional food legislation, for example the NSW *Food Act 2003* provides adequate power for enforcing the relevant standards. The Act is based on the model food provisions provided in the Code for uniform adoption by all jurisdictions.

The NSW Food Authority utilises both education/information and enforcement activities to achieve compliance and NSW believes an appropriate balance is struck between 'sticks' and 'carrots'. NSW Food Authority is not constrained by any difficulties regarding retention of expert staff.

NSW works with other States and Territories through a variety of mechanisms to make compliance more effective. For example, the jurisdictions have a "home state rule" through which a jurisdiction may agree to take the lead role with respect to matters where the principal place of business is in that State or Territory. The home state rule is not binding. NSW may elect to take unilateral action where there is a difference in interpretation of an ambiguously worded standard, or where NSW is dissatisfied with the approach taken by the "home state" or their internal policies. Some examples of poor drafting of food standards have led to differing interpretations between the jurisdictions. However, food regulators in Australia are making increasing efforts to monitor and achieve effective and consistent implementation and enforcement of food regulation through the Implementation Sub-Committee (ISC) of the FRSC. National enforcement policy is being developed by ISC to promote consistency.

7.3 Resource constraints and access to information

While the food regulatory regime has the necessary structure and processes to effectively address public health and safety issues, it may lack the capacity to address all public health and safety issues in the same depth as, for example, the EU scheme, primarily due to data and resource constraints.

Access to technical information may be an issue in terms of the development of standards by FSANZ and in assessing the risk associated with *existing* products in the market. The NSW Food Authority is currently reviewing, with NSW Health, access to timely and appropriate toxicological advice to input to such standards development and risk assessment. There is a shortage of toxicological expertise in Australia which could have negative impacts in the long term on the efficiency and risk assessment outcomes of Australian food regulators.

In the context of food safety there is also a demonstrated need for adequate resourcing of agencies at both Commonwealth and State/Territory level to enhance public understanding on specific issues. The NSW Food Authority's mercury in fish campaign demonstrates the effectiveness of such an approach.

7.4 Use of international regulatory benchmarks

FSANZ advises that it makes extensive use of international data when assessing chemicals for registration and use in Australia. This approach captures efficiencies and may provide a good model for other aspects of chemicals regulation.

The predominant international framework is the joint World Health Organisation/Food and Agriculture Organisation's *Codex Alimentarius Commission*, with which FSANZ is

significantly involved. This international involvement and benchmarking should continue, in order to maximise gains from alignment with international best practice and efficiencies from appropriate use of international data and information for risk assessment and consumer education processes.

With respect to food standards, the Trans Tasman Mutual Recognition Agreement is not a significant issue because of the separate joint Australia-New Zealand agreement to adopt uniform food standards through the FSANZ process, although it should be noted that New Zealand has varied from the Food Standards Code with respect to the adoption of maximum residue limits for agricultural chemicals.

8. Conclusion

NSW supports and proactively implements best practice regulation and works with all Australian jurisdictions to implement a number of nationally coordinated regulatory requirements and management approaches.

While existing chemicals and plastics regulatory and management frameworks are complex, they are generally providing adequate protection of health, the environment and trade. A degree of complexity is needed because of the prevalence of chemicals in our daily lives, the variety of uses to which we put them, and the broad range of human and environmental exposures.

The challenge is to ensure that these systems are linked by common principles and coordination mechanisms that reduce the complexity where possible, avoid duplication of effort, provide mutually reinforcing feedback and deliver robust and consistent outcomes for the environment, health and trade. Benefits could be gained from linking the separate regulatory frameworks (agricultural and veterinary chemicals, industrials, therapeutics, food safety) through a central, national policy-setting mechanism. This would help to facilitate coordinated regulatory and management approaches. The involvement of states and territories in such a mechanism would be essential.

It is important for Australia to keep pace with international developments in assessment and risk management of chemicals. Australia is closely linked to many international initiatives and both contributes to, and benefits from, a range of information and data sharing agreements. However, it is also important to recognise that not all information, data and risk management controls are wholly and immediately transferable across countries, jurisdictions or even regions due to the different contexts. While ‘uniqueness’ issues may lead to some additional costs for industries and governments, impacts from ignoring different biophysical, social and economic contexts can also be high.

There are some significant gaps in the current chemicals management systems, for example in the management of industrial chemicals. NSW supports the work to plug the gaps in the industrial chemicals system being undertaken by the national industrial chemicals regulator (NICNAS’s Existing Chemicals Review Program reforms) and by the Environment Protection and Heritage Council as part of the National framework for Chemicals Environmental Management (NChEM). Other gaps are outside the scope of the terms of reference for this Study (for example in the therapeutics management framework), but are likely to need to be addressed further down the track.

Appendix – Case Studies

Case study 1:

An example of the costs of risk assessment approaches that do not take into account the pathways for chemical releases to the environment

Air emissions and environmental health impacts associated with the use of chemicals and plastics can be considerable. In many instances emissions from chemicals and plastic are regulated via licensing of industrial or commercial premises. However, several significant chemicals and plastic related air pollution source sectors that contribute to ambient and indoor air pollution are without appropriate national management frameworks. For example volatile organic compounds (VOCs) (this includes some air toxics) are emitted from surface coatings and consumer products (such as personal care and household products) through the evaporation of solvents when a product is applied. The resulting VOC emissions impact on both ambient air quality and indoor air quality.

It is estimated that nationally aggregated air emissions attributable to the use of architectural surface coatings is around 36,000 tonnes of VOCs per year or around 6% of national anthropogenic VOC emissions. Nationally aggregated air emissions attributable to the use of consumer products are estimated to be around 70,000 tonnes per year or around 11% of national anthropogenic VOC emissions. VOC emissions from architectural surface coatings and consumer products are significant when considered at the national level, accounting for around 17% of all anthropogenic VOC emissions in Australia. The emission of VOCs in the Sydney region is of particular concern and is receiving considerable policy attention given the regional exceedance of national air pollution standards. The cost of air pollution in the NSW greater metropolitan region is estimated to be $4.2 billon per annum.

International approaches (particularly the US and EU) have opted to strictly regulate the VOC content of these source sectors, especially in the circumstance where VOCs lead to poor indoor and ambient air quality. Currently this is not the case in Australia, although there are some voluntary schemes.

Industry has expressed its desire for a unified national approach to addressing the issue. Informal industry advice to the NSW Department of Environment and Climate Change is that some firms see advantages in a regulatory approach that could drive and reward product reformulation, and protect Australian manufacturers and the market from inferior overseas products. The NSW Government is investigating possible approaches to the better management of VOC emissions from both these source sectors. Industry agreements as well as regulatory approaches are being evaluated, however this issue could benefit from a comprehensive and consistent national approach based on improved risk assessment and post market data collection processes.

Case Study 2:

An example of the costs and impacts of not assessing and managing chemicals throughout their life cycle

In the northern spring of 2002 residents in rural Germany began to complain of odours arising from the application of 'sludge' material to agricultural fields. Residents were assured that the material in question was a biological 'soil improver' sourced from an EU jurisdiction outside Germany.

However in 2006 - after tonnes of material had been applied - it emerged that the German company had misrepresented its nature and that the material in question was sourced from an industrial process and was highly hazardous. The material contained high levels of perfluorinated surfactants (PS) (including perfluorooctane sulfonate (PFOS) and perfluorooctanoic acid (PFOA)). Further, this material was present in high levels in leachate and runoff and had entered local river systems, including the Mohne Reservoir which provided drinking water for approximately five million people. Given the hazards PS poses to human health, bottled drinking water was provided to residents in two German cities in 2006.

Costs associated with providing alternative drinking water to the population affected by PS contamination have been high. Total costs associated with remediation of PS-contaminated soil have yet to be calculated. However, as of November 2006 costs associated with treating water leaching from the most affected site have exceeded two million Euros. Over 1000 sites were affected by the material.

This case demonstrates the risks inherent in any system that does not include consideration of the need for appropriate tracking and monitoring/evaluation at key points across the lifecycle. While it would not have been permitted in Germany for hazardous material to be applied to land, material for potential use as a soil improver would not be likely to be tested for PS as it is unlikely to be present in material used for soil conditioning and therefore may not have been identified as a problem under the current system. Combined with an apparent breakdown of tracking and controls as the material was transferred between jurisdictions, the incident resulted in a huge transfer of costs from the private realm into the public.[21]

[21] P Krofges et al (2007) *PFOS/PFOA Contaminated Mega-sites in Germany Polluting the Drinking Water Supply of Millions of People*, in Organohalon Compunds, Vol 69.

Case Study 3:

California moves to promote innovation in safer chemistry

California is seeking to position itself as a global leader in safer chemistry innovation. The aim is for government and stakeholders to work together to deal with hazardous and other waste before it is generated by analysing the fate of chemicals through their life cycle and transitioning away from managing toxic chemicals at the end of the lifecycle to reducing or eliminating their use. The goal is to significantly reduce public health and environmental impacts as well as costs, by affecting the redesign of product formulations and manufacturing processes so as to avoid piecemeal, chemical-by-chemical initiatives.

The California EPA through its *Green Chemistry Initiative* aims to develop a coordinated, comprehensive strategy to foster the:

- development of information on the hazards posed by chemicals;
- ways to reduce exposure to dangerous substances;
- approaches that encourage less polluting industrial processes; and
- strategies to encourage manufacturers to take greater responsibility for the products they produce.

A list of options will be submitted to the head of the California EPA by 1 Jan 2008 and recommendations on a final chemical policy are expected by 1 July 2008.[22]

California's initiative takes a similar approach to measures adopted by the European Union and the Canadian government to encourage greater manufacturer responsibility and more rigorous risk assessment processes.[23]

Developments in California are of interest because it has one of the world's largest economies and is widely seen as a leader in the environmental arena because it has passed some of the strongest environmental laws. Other jurisdictions may model their chemical initiatives on Californian legislation and policy.

[22] See the Green Chemistry Initiative website http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/index.cfm).

[23] The California Department of Toxic Substances Control (DTSC) will hold a public forum that will argue for and against the development of a list of toxic chemicals harmful to health and the environment. DTSC activities include the *California Green Chemistry Initiative*, as part of a multi-agency team. For more information see http://www.dtsc.ca.gov/PollutionPrevention/GreenChemistryInitiative/ Calendar.cfm.

Case Study 4:

Health and environmental costs of inadequate management of chemicals

In California a recent academic report attempted to cost the impacts of inappropriate management of chemicals.[24] The key conclusions of the report are that information asymmetries, regulatory gaps and the lack of market/regulatory drivers are impacting negatively on public and environmental health, industry, business and government. Without comprehensive information on the toxicity and ecotoxicity of chemicals manufacturers, users, consumers and regulators do not have a sound basis for making safer decisions about chemical hazards. However, regulators do not even have the legal tools to efficiently mitigate known hazards. The lack of both market and regulatory drivers has dampened motivation on the part of U.S. chemical manufacturers to invest in new safer alternatives. Evidence of public and environmental health problems related to chemicals continues to accumulate. The report found for example:

- Between now and 2033, the USEPA expects 600 new hazardous waste sites to appear each month in the U.S. and require cleanup, adding to the 77,000 current contaminated sites. Efforts at site mitigation are expected to cost about US$250 billion.
- Among children, chemical exposures are estimated to contribute to 100% of lead poisoning cases, 10-35% of asthma cases, 2-10% of certain cancers, and 5-20% of neurobehavioural disorders. The USEPA found almost 700 different chemicals in human tissues in a nationwide survey of Americans in 1987.
- Each month, an estimated 1,900 Californians are diagnosed with a preventable, deadly chronic disease that is attributable to chemical exposures in the workplace; another 540 Californians die as a result of a chronic disease linked to workplace chemical exposures.

The report also found that there is a strong case for government intervention to address these issues because:

- Without a robust market or regulatory driver, most firms seek to avoid the disruption and costs that can accompany technological change, even when such changes are necessary for the long-term viability of the industry. As a result, policies that induce technological change are largely absent. Weak regulatory oversight in the chemicals market means that businesses are not penalised for manufacturing or using hazardous chemicals thus weakening the competitive advantage of safer chemistry products.
- Because of the data gaps for chemicals, government would have great difficulty identifying and prioritising chemicals for use reduction through labelling, regulation etc.

[24] Michale P. Wilson et al (2006) *Green Chemistry in California: A Framework for Leadership in Chemicals Policy and Innovation*, University of California, available at: http://coeh.berkeley.edu/FINALgreenchemistryrpt.pdf.